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LEGAL AND CUSTOMARY WEIGHTS PER BUSHEL OF SEEDS.¹

INTRODUCTION.

While the selling of seeds by the measured bushel has largely disappeared in the trade, the weight per bushel still has an important value in determining grade, especially in grass seeds, which vary greatly in quality. Redtop seed, weighing 10 pounds per bushel, is composed largely of chaff and contains a very small percentage of good seed, while fancy seed, containing from 85 to 95 per cent of pure seed, weighs from 35 to 40 pounds per bushel. Similar variations in weight exist in connection with the handling of other common grass seeds, such as bluegrass, orchard grass, brome-grass, rye-grass, and the fescues. The weights per bushel of grains do not vary as much as do those of grass seeds, but nevertheless the weight per bushel is an important factor to be considered in grading.

LEGAL WEIGHTS PER BUSHEL.

The weights per bushel for all seeds for which weights per bushel have been established by law are given in Table I. These have been taken from the latest statutes and have been verified by the secretaries of state of each State. In several instances the legal weights are obviously misleading and should be changed. There is evidently an error in the Louisiana statute, which gives the weight for both barley and rye as 32 pounds. The weights for buckwheat vary from 40 to 52 pounds in different States. The legal weights for oats should be made more nearly uniform; in Pennsylvania and West Virginia the legal weight is 32 pounds, in Virginia 30 pounds, and in Maryland 26 pounds. The legal weight for Kentucky bluegrass and redtop in all States where a legal weight has been established is 14 pounds. This weight was established before the present methods of cleaning came

¹The varying use in weights of our common field and garden seeds in different States must necessarily lead to confusion. It is hoped that a more widely disseminated knowledge of this varied usage, such as is pointed out in this paper, will tend to lessen the confusion and bring about greater uniformity. Furthermore, by calling attention to the present unsatisfactory conditions it may aid in preparing the way for the general introduction of the metric system now used in nearly all other civilized countries.

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into general use and while the seed was sold in the chaff. Cleaned seed of good grade weighs from two to three times as much, as recorded in detail in Table I, and the legal weights should be changed accordingly.

CUSTOMARY WEIGHTS PER BUSHEL.

In numerous instances the customary weights per bushel of seeds used by the trade are not the same as the legal weights. The boards of trade and chambers of commerce in the principal cities have reported the customary weights used by them and where these differ from the legal weights they are given in the footnotes to Table I.

Seedsmen handle a large number of grass and forage plant as well as other seeds, for few of which legal weights per bushel have been established. Table II shows the customary weights per bushel used for these seeds by representative seedsmen in the different States. In most instances two weights are given, indicating the differences in quality recognized in the trade. Well cleaned seed of good quality will weigh approximately as much as the higher weight given.

TABLE I.—*Legal weights per bushel of seeds:*

States and Territories.	Field crops.																	
	Wheat.	Corn, shelled.	Corn, in ear.	Corn, in ear, unshucked.	Oats.	Barley.	Rye.	Buckwheat.	Beans.	Peas.	Cotton, Upland.	Cotton, Sea Island.	Pop corn, shelled.	Pop corn, in ear.	Hemp.	Flax.	Rice, rough.	Peanuts.
Alabama	60	56	70	75	32	47	56		60	60	32							
Arizona	60	54			32	45	56		ff 60									
Arkansas ^a	60	56	70	74	32	48	56	52	gg 60	60	33½					56		
California ^b	60	b 52			b 32	b 50	b 54	b 40										
Colorado ^c	60	56	70		32	48	56	c 52	60	(c)					44	(c)		
Connecticut	60	56			32	48	56	48	60	60	30	44				55	45	
Delaware	60	56																
District of Columbia ^{cc}																		
Florida	60	56		70	32	48	56		60		32	46						22
Georgia ^d	60	56	70		32	47	56	52	gg 60	60	30				44	56	43	
Idaho	60	56			36	48	56	42								56		
Illinois ^{ef}	60	56	70		32	48	56	52	gg 60						44	56		
Indiana ^g	60	56	dd 70		32	48	56	50	60				(g)	70	44			
Indian Territory ^{cc}																		
Iowa	60	56	70		32	48	56	52	60						44	56		
Kansas	60	56	70		32	48	56	50	60				56		44	56		
Kentucky ^h	60	56	ee 70		32	h 47	56	56	gg 60	60					44	56		
Louisiana ⁱ	60	i 56	(i)		32	i 32	i 32	(i)	(i)	(i)					(i)	(i)		
Maine	60	56			32	48		48	62	60								
Maryland ^j	(j)	(j)	(j)		j 26	(j)	(j)	(j)	(j)	(j)					(j)	(j)	(j)	
Massachusetts ^k	60	56			32	48	56	48	60	60	30	44				55	45	
Michigan	60	56	70		32	48	56	48	60	60					44	56		
Minnesota ^{lm}	l 60	56	70		32	m 48	56	50	60	60					50	(l)		
Mississippi ⁿ	60	56	72		32	48	56	48	gg 60	60	n 32				44	56		
Missouri ^o	60	56	70		32	48	56	52	60	60	33				44	56	(o)	
Montana	60	56	70		32	48	56	52	60	60					44	56		
Nebraska ^p	60	56	70		32	48	56	52	gg 60	60					44	56		
Nevada ^{cc}																		
New Hampshire	60	56			32		56		62	60								
New Jersey	60	56			30	48	56	50	60	60						55		
New Mexico ^{cc}																		
New York ^{qr}	60	56			32	48	56	48	60	60	30	44				r 55	45	
North Carolina	60	56			32	48	56	50	60	60	30					55	44	
North Dakota	60	56	70		32	48	56	42	60	60						56		
Ohio ^{stu}	60	56	68		32	48	56	50	60	u 60				t 42	44	56	(u)	
Oklahoma	60	56	70		32	48	56	42	60	60						56		
Oregon	60	56			32	46	56	42										
Pennsylvania ^v	60	56			32	v 47	56	48										
Rhode Island	60	56	70		32	48	56	48	60	60	30	44			44	56		
South Carolina ^w											30	w 42						
South Dakota	60	56	70		32	48	56	42	60	60						56		
Tennessee	60	56	70	74	32	48	56	50	60	60	28			70	44	56		23
Texas ^{xy}	60	56	70	72	32	48	56	42	gg 60		32				44	56		
Utah ^{cc}																		
Vermont	60	56			32	48	56	48	62	60								
Virginia ^z	60	56	70		z 30	48	56	52	gg 60		32				44	56		22
Washington ^{aa}	60	56			32	48	56	42								56		
West Virginia	60	56			32	48	56	52	60							56		
Wisconsin ^{bb}	60	56	(bb)		32	48	56	50	60	60	30	44			44	56	45	
Wyoming ^{cc}																		

TABLE I.—*Legal weights per bushel of seeds*—Continued.

States and Territories.	Grass and forage plants.													
	Clover.	Timothy.	Herd's grass.	Hungarian grass.	Millet.	Japanese barnyard millet.	Canary seed.	Bluegrass.	Redtop.	Orchard grass.	Amber cane.	Sorghum.	Kafir corn.	Johnson grass.
Alabama														
Arizona														
Arkansas ^a	60	60			50			14	14	14		50		28
California ^b														
Colorado ^c	60	45		(c)	(c)			14	(c)	(c)	(c)		(c)	(c)
Connecticut	60	45	45											
Delaware														
District of Columbia ^{cc}														
Florida					50							56		
Georgia ^d	60	45						14						
Idaho	60													
Illinois ^{ef}	60	45						14						
Indiana ^g	60	45			50			14		14				
Indian Territory ^{cc}														
Iowa	60	45		50	50			14				30		
Kansas	60	45		50	50			14				56	56 ^j	
Kentucky ^h	60	45		50	50			14		14				
Louisiana ⁱ	(i)	(i)		(i)	(i)		(i)	(i)		(i)		(i)		(i)
Maine			45											
Maryland ^j	(j)	(j)		(j)	(j)			(j)	(j)	(j)				
Massachusetts ^k	60	45	45			35								
Michigan	60	45		50	50			14	14	14				
Minnesota ^{lm}	60	45		48	48			14	14	14		57		
Mississippi ⁿ	60	45		50	50			14				42		
Missouri ^o	60	45		48	50			14	14	14		42		
Montana	60	45		50				14						
Nebraska ^p	60	45		50	50			14				30		
Nevada ^{cc}														
New Hampshire														
New Jersey	64										57			
New Mexico ^{cc}														
New York ^{qr}	60	45	45					(r)	(r)	(r)				
North Carolina	60													
North Dakota	60	42			50									
Ohio ^{stu}	60	45		50	50		(u)	(u)	(u)	(u)	(u)	(u)	(u)	
Oklahoma	60	42												
Oregon	60													
Pennsylvania ^v	60													
Rhode Island	60	45		50	50									
South Carolina ^w														
South Dakota	60	42												
Tennessee	60	45		48	50		60	14	14	14		50		
Texas ^{xy}	60	45		48	50									
Utah ^{cc}														
Vermont	60	45	45											
Virginia ^z	60	45		48	50			14	12	14				
Washington ^{aa}	60													
West Virginia	60	45												
Wisconsin ^{bb}	60	45		48	50									
Wyoming ^{cc}														

TABLE I.—*Legal weights per bushel of seeds*—Concluded.

States and Territories.	Grass and forage plants.								Miscellaneous.								
	English bluegrass.	Italian rye-grass.	Velvet grass.	Rape.	Soy beans.	Cowpeas.	Velvet beans, in hull.	Beggar weed.	Broom corn.	Spelt.	Castor beans.	Osage orange.	Indian wheat.	Apple seed.	Chestnuts.	Hickory nuts.	Walnuts.
Alabama																	
Arizona																	
Arkansas ^a									48								
California ^b																	
Colorado ^c	(c)								(c)								
Connecticut																	
Delaware																	
District of Columbia ^{cc}																	
Florida							78	62			48						
Georgia ^d																	
Idaho																	
Illinois ^{ef}											46						
Indiana ^g											46	33					
Indian Territory ^{cc}																	
Iowa									30		46	32					
Kansas	22										46						
Kentucky ^h	14										45						
Louisiana ⁱ	(i)	(i)		(i)		(i)			(i)		(i)	(i)					
Maine																	
Maryland ^j																	
Massachusetts ^k					58 ^l												
Michigan											46	33					
Minnesota ^{lm}				50					57								
Mississippi ⁿ											46						
Missouri ^o											46	36				(o)	(o)
Montana																	
Nebraska ^p											46	32					
Nevada ^{cc}																	
New Hampshire																	
New Jersey																	
New Mexico ^{cc}																	
New York ^{qr}																	
North Carolina																	
North Dakota									30	48							
Ohio ^{stu}									(u)		(u)	(u)					
Oklahoma									30								
Oregon																	
Pennsylvania ^v																	
Rhode Island											46			40			
South Carolina ^w																	
South Dakota									30								
Tennessee		20	7						42		46	33		40	50	50	50
Texas ^{xy}																	
Utah ^{cc}																	
Vermont													46				
Virginia ^z						60						34			57		
Washington ^{aa}																	
West Virginia																	
Wisconsin ^{bb}				50													
Wyoming ^{cc}																	

^a The Little Rock Board of Trade uses the legal weights per bushel for the State of Arkansas.

^b The Merchants' Exchange of San Francisco uses the legal weight per bushel for the State of California for wheat. It also uses the following weights per bushel for the commodities named below:

	Pounds.		Pounds.
Barley:		Oats:	
Brewing	46	Black feed	30
Chevalier	53	Red feed	33
Feed	41	White feed	35
Buckwheat	50	White milling	37
Corn, shelled	56	Rye	58

^c The Denver Chamber of Commerce and Board of Trade uses the legal weights per bushel for the State of Colorado, except for buckwheat. It also uses the following weights per bushel for the commodities named below:

	Pounds.		Pounds.
Alfalfa	60	Meadow fescue (English bluegrass)	24
Amber cane	50	Millet	50
Broom corn	46	Orchard grass	14
Buckwheat	50	Peas	60
Flax	56	Redtop	14
Hungarian millet (Hungarian grass)	48	Redtop, fancy	32
Johnson grass	25	Sweet corn	50
Kafir corn	56		

^d The Columbus Board of Trade uses the legal weights per bushel for the State of Georgia.

^e The Chicago Board of Trade uses the legal weights per bushel for the State of Illinois.

^f The Peoria Board of Trade uses the legal weights per bushel for the State of Illinois.

^g The Indianapolis Board of Trade uses the legal weights per bushel for the State of Indiana. It also uses 56 pounds as the weight per bushel for shelled pop corn.

^h The Louisville Board of Trade uses the legal weights per bushel for the State of Kentucky, except for barley, for which it uses the weight per bushel of 48 pounds.

ⁱ The New Orleans Board of Trade uses the legal weights per bushel for the State of Louisiana for wheat, shelled corn, and oats. It also uses the following weights per bushel for the commodities named below:

	Pounds.		Pounds.
Alfalfa	60	Meadow oat-grass	14
Barley	48	Millet:	
Beans	60	German	50
Broom corn	46	Italian	50
Buckwheat	48	Mustard	58
Bur clover	8	Orchard grass	14
Canary seed	60	Osage orange	33
Castor beans	46	Peas, English:	
Clover:		Smooth	60
Alsike	60	Wrinkled	56
Crimson	60	Radish	50
Red	60	Rape	50
White	60	Rescue grass	14
Corn:		Rye	56
In ear	70	Rye-grass:	
Shelled, Adams	50	English	20
Cowpeas	60	Italian	20
Flax	56	Sorghum	50
Hemp	44	Sunflower, Russian	24
Hungarian grass	48	Teosinte	59
Japan clover	25	Timothy	45
Johnson grass	25	Turnip	58
Kentucky bluegrass	14	Vetch	60
Meadow fescue (English bluegrass)	15		

^j The Baltimore Chamber of Commerce uses the following weights per bushel for the commodities named below:

	Pounds.		Pounds.
Barley	48	Oats	32
Beans	62	Oats (State)	26
Beans (State)	60	Orchard grass	14
Bluegrass	14	Peanuts:	
Buckwheat	48	African	32
Clover	60	Virginia	22
Corn:		Wilmington	28
On cob	70	Peas	60
Shelled	56	Peas (State)	56
Flax	56	Redtop:	
Hemp	44	Chaff	14
Hungarian grass	48	Fancy	32
Millet:		Rye	56
American	50	Timothy	45
German	50	Wheat	60

^k The Boston Chamber of Commerce uses the legal weights per bushel for the State of Massachusetts.

^l The Duluth Board of Trade uses the legal weights per bushel for the State of Minnesota. It also uses the following weights per bushel for the commodities named below:

	Pounds.		Pounds.
Flax	56	Macaroni (durum) wheat	60

^m The Minneapolis Chamber of Commerce uses the legal weights per bushel for the State of Minnesota, except for barley, for which it uses the weight per bushel of 50 pounds.

ⁿ The Meridian Board of Trade uses 33½ pounds as the weight per bushel for cotton seed.

^o The Merchants' Exchange of St. Louis uses the legal weights per bushel for the State of Missouri and also uses the following weights per bushel for the commodities named below:

	Pounds.		Pounds.
Hickory nuts	50	Walnuts	50
Peanuts, dry southern	22		

^p The Omaha Board of Trade uses the legal weights per bushel for the State of Nebraska, except for sorghum, for which it uses the weight per bushel of 50 pounds.

^q The Buffalo Merchants' Exchange uses the legal weights per bushel for the State of New York.

^r The New York Produce Exchange uses the legal weights per bushel for the State of New York, except for flax. It also uses the following weights per bushel for the commodities named below:

	Pounds.		Pounds.
Bluegrass	14	Orchard grass	14
Flax	56	Redtop	14

^s The Cincinnati Chamber of Commerce and Merchants' Exchange uses the legal weights per bushel for the State of Ohio, except for Hungarian grass, for which it uses the weight per bushel of 48 pounds.

^t The Cleveland Chamber of Commerce uses the legal weights per bushel for the State of Ohio, except for pop corn, in ear, for which it uses the weight per bushel of 40 pounds.

^u The Columbus Board of Trade uses the legal weights per bushel for the State of Ohio. It also uses the following weights per bushel for the commodities named below:

	Pounds.		Pounds.
Bluegrass	14	Osage orange	33
Broom corn	46	Peanuts	24
Canary seed	60	Pearl millet	56
Cane	50	Peas, wrinkled	56
Castor beans	46	Redtop	14
Japan clover	20 ^v	Sorghum	50
Kafir corn	50	Sweet vernal grass	10
Meadow foxtail	25	Tall meadow oat-grass	12
Orchard grass	14	Wood meadow grass	14

^v The Philadelphia Produce Exchange uses the legal weights per bushel for the State of Pennsylvania, except for barley, for which it uses the weight per bushel of 48 pounds.

^w The Columbia Chamber of Commerce uses the weight per bushel of 45 pounds for Sea Island cotton seed.

^x The Galveston Cotton Exchange uses the legal weights per bushel for the State of Texas.

^y The Fort Worth Board of Trade uses the legal weights per bushel for the State of Texas.

^z The Richmond Grain and Cotton Exchange uses the weight per bushel of 32 pounds for oats.

^{aa} The Seattle Chamber of Commerce uses the legal weights per bushel for the State of Washington.

^{bb} The Milwaukee Chamber of Commerce uses the legal weights per bushel for the State of Wisconsin. For corn, on cob, it also uses the weight per bushel of 75 pounds from harvest to January 1 and 70 pounds after January 1.

^{cc} No legal weights.

^{dd} "From harvest until December 1, 70 pounds; after December 1, 68 pounds."

^{ee} "From November 1 to May 1, 70 pounds; from May 1 to November 1, 68 pounds."

^{ff} "Small white beans, 60 pounds; other beans, 55 pounds."

^{gg} "White beans."

^{hh} "German, Tennessee, and Missouri millet."

TABLE II.—*Seedsmen's customary weights per bushel of seeds.*

Kind of seed.	Pounds per bushel.	Kind of seed.	Pounds per bushel.
Alfalfa	60	Meadow grass—continued.	
Amber cane	45-60	Wood	14-24
Bent grass :		Millet :	
Creeping	10-20	Barnyard	30-60
Rhode Island	10-15	Broom corn	45-60
Bermuda grass	24-36	Common	48-50
Bird'sfoot clover	60	German	48-50
Bitter vetch	60	Golden Wonder	48-50
Bluegrass :		Hungarian	48-50
Canada	14-20	Pearl	48-56
Kentucky	14-30	Milo maize	50-60
Texas	14	Oat-grass :	
Broad bean	50-60	Tall	10-14
Brome, awnless	10-14	Yellow	7-14
Broom corn	45-60	Orange cane	45-60
Bur clover :		Orchard grass	10-18
Hulled	60	Pea :	
Unhulled	8-10	Field	60
Spotted	60	Garden, smooth	60
Castor bean	46-60	Garden, wrinkled	56
Clover :		Peanut	20-30
Alsike	60	Rape, winter	50-60
Crimson	60	Redtop :	
Egyptian	60	Chaff	10-14
Mammoth	60	Fancy	25-40
Red	60	Rescue grass	12-28
White	60	Rice	43-45
Cowpea	56-60	Rye-grass :	
Crested dog's-tail	14-30	English	10-30
Fescue :		Italian	14-25
Hard	12-16	Sainfoin	14-32
Meadow	14-24	Serradella	28-36
Red	12-15	Soy bean	58-60
Sheep's	12-16	Spelt	40-60
Tall	14-24	Sunflower	24-50
Various leaved	14-18	Sweet clover :	
Flat pea	50-60	Hulled	60
Flax	48-56	Unhulled	33
Hemp	40-60	Sweet corn (according to variety) ..	36-56
Japan clover :		Sweet vernal, perennial	6-15
Hulled	60	Teosinte	40-60
Unhulled	18-25	Timothy	45
Johnson grass	14-28	Velvet bean	60
Kafir corn	50-60	Vetch :	
Lentil	60	Hairy	50-60
Lupine, white	50-60	Spring	60
Meadow foxtail	7-14	Water grass, large	14
Meadow grass :		Wild rice	15-28
Fowl	11-14	Yellow trefoil	60
Rough-stalked	14-20		